

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 4, 5, 6, 7, 8, 9, 10, 11, 14, and 26 in accordance with the following:

1. (CURRENTLY AMENDED) A method comprising ~~the steps of~~:
inputting an optical signal into an optical waveguide structure for providing a nonlinear effect;
generating chirp in said optical signal by said nonlinear effect; and
supplying an output optical signal output from said optical waveguide structure to an optical filter having transmission bands at longer and shorter wavelength sides than a center wavelength of said output optical signal output from said optical waveguide structure to remove a component in which said chirp is small from said output optical signal, said transmission bands at longer and shorter wavelength sides being longer and shorter for a predetermined wavelength distant from said center wavelength.
2. (ORIGINAL) A method according to claim 1, wherein said optical waveguide structure comprises an optical fiber for providing normal dispersion.
3. (ORIGINAL) A method according to claim 1, wherein said optical filter comprises an optical bandstop filter having a center wavelength substantially coinciding with the center wavelength of said optical signal.
4. (CURRENTLY AMENDED) A method according to claim 3, further comprising ~~the step of~~ supplying said output optical signal to an optical bandpass filter to remove a component in which said chirp is larger than that in a main slope portion of a pulse of said optical signal.
5. (CURRENTLY AMENDED) A method according to claim 1, further comprising ~~the step of~~ supplying said optical signal to be input into said optical waveguide structure to an

optical filter to remove a noise component outside of a signal band in said optical signal.

6. (CURRENTLY AMENDED) A method according to claim 1, further comprising the step of optically amplifying said optical signal to be input into said optical waveguide structure so that a required amount of chirp is obtained.

7. (CURRENTLY AMENDED) A method according to claim 1, further comprising the step of supplying said output optical signal to a dispersion compensator so that said output optical signal undergoes dispersion compensation.

8. (CURRENTLY AMENDED) A method according to claim 7, wherein:
said optical waveguide structure comprises a first optical fiber for providing normal dispersion; and

 said dispersion compensator comprises a second optical fiber for providing anomalous dispersion;

 said method further comprising the step of adjusting a dispersion and input power of said second optical fiber so that pulse compression is performed to such an extent that a defect near the pulse peak of an optical signal output from said second optical fiber is reduced.

9. (CURRENTLY AMENDED) A method according to claim 8, further comprising the step of supplying said optical signal output from said second optical fiber to an optical bandpass filter so that the pulse width of said optical signal output from said second optical fiber substantially coincides with the pulse width of said optical signal input into said first optical fiber.

10. (CURRENTLY AMENDED) A method according to claim 1, further comprising the step of performing pulse compression on said optical signal to be input into said optical waveguide structure.

11. (CURRENTLY AMENDED) A method according to claim 10, wherein said pulse compression performing step comprises the step of:

amplifying said optical signal to be input into said optical waveguide structure; and

passing the amplified said optical signal through a first optical fiber for providing normal dispersion and a second optical fiber for providing anomalous dispersion.

12. (ORIGINAL) A method according to claim 1, wherein said optical signal to be input into said optical waveguide structure comprises WDM signal light obtained by wavelength division multiplexing a plurality of optical signals.

13. (ORIGINAL) A method according to claim 12, wherein said optical waveguide structure comprises an optical fiber for providing normal dispersion, said optical fiber having a dispersion large enough to eliminate the occurrence of crosstalk between channels of said WDM signal light.

14. (CURRENTLY AMENDED) A device comprising:

an optical waveguide structure for providing a nonlinear optical effect so that chirp is generated in an optical signal input; and

an optical filter having transmission bands at longer and shorter wavelength sides than a center wavelength of said output optical signal output from said optical waveguide structure for accepting an output optical signal output from said optical waveguide structure to remove a component in which said chirp is small and large from said output optical signal, said transmission bands at longer and shorter wavelength sides being longer and shorter for a predetermined wavelength distant from said center wavelength.

15. (ORIGINAL) A device according to claim 14, wherein said optical waveguide structure comprises an optical fiber for providing normal dispersion.

16. (ORIGINAL) A device according to claim 14, wherein said optical filter comprises an optical bandstop filter having a center wavelength substantially coinciding with the center wavelength of said optical signal.

17. (ORIGINAL) A device according to claim 16, further comprising an optical bandpass filter for accepting said output optical signal to remove a component in which said chirp is larger than that in a main slope portion of a pulse of said optical signal.

18. (ORIGINAL) A device according to claim 14, further comprising an optical filter for accepting said optical signal to be input into said optical waveguide structure to remove a noise component outside of a signal band in said optical signal.

19. (ORIGINAL) A device according to claim 14, further comprising an optical amplifier for optically amplifying said optical signal to be input into said optical waveguide structure so that a required amount of chirp is obtained.

20. (ORIGINAL) A device according to claim 15, further comprising a dispersion compensator for accepting said output optical signal.

✓ 21. (ORIGINAL) A device according to claim 20, wherein:

 said optical waveguide structure comprises a first optical fiber for providing normal dispersion; and

 said dispersion compensator comprises a second optical fiber for providing anomalous dispersion;

 said device further comprising an optical bandpass filter for accepting an optical signal output from said second optical fiber so that the pulse width of said optical signal output from said second optical fiber substantially coincides with the pulse width of said optical signal input into said first optical fiber.

22. (ORIGINAL) A device according to claim 14, further comprising means for performing pulse compression on said optical signal to be input into said optical waveguide structure.

23. (ORIGINAL) A device according to claim 22, wherein said pulse compression performing means comprises a first optical fiber for providing normal dispersion and a second optical fiber for providing anomalous dispersion.

24. (ORIGINAL) A device according to claim 14, wherein said optical signal to be input into said optical waveguide structure comprises WDM signal light obtained by wavelength division multiplexing a plurality of optical signals.

25. (ORIGINAL) A device according to claim 24, wherein said optical waveguide structure comprises an optical fiber for providing normal dispersion, said optical fiber having a dispersion large enough to eliminate the occurrence of crosstalk between channels of said WDM signal light.

26. (CURRENTLY AMENDED) A system comprising:
an optical fiber transmission line for transmitting an optical signal; and
an optical signal regenerating device for accepting an optical signal output from said
optical fiber transmission line;
said optical signal regenerating device comprising an optical waveguide structure for
providing a nonlinear optical effect so that chirp is generated in said optical signal supplied, and
an optical filter having transmission bands at longer and shorter wavelength sides than a center
wavelength of said output optical signal output from said optical waveguide structure for
accepting an output optical signal output from said optical waveguide structure to remove a
component in which said chirp is small and large from said output optical signal, said
transmission bands at longer and shorter wavelength sides being longer and shorter for a
predetermined wavelength distant from said center wavelength.

27. (ORIGINAL) A system according to claim 26, further comprising a second optical
fiber transmission line for transmitting said output optical signal.

28. (ORIGINAL) A system according to claim 27, further comprising an optical
transmitter connected to an input end of said optical fiber transmission line, and an optical
receiver connected to an output end of said second optical fiber transmission line.

29. (ORIGINAL) A system according to claim 26, wherein said optical signal
transmitted by said optical fiber transmission line comprises WDM signal light obtained by
wavelength division multiplexing a plurality of optical signals.

30. (ORIGINAL) A system according to claim 27, wherein each of said optical fiber
transmission line and said second optical fiber transmission line comprises an optical amplifier
repeater transmission line including at least one optical amplifier.

31. (ORIGINAL) A method according to claim 1, wherein:
said optical waveguide structure comprises a first optical fiber for providing normal
dispersion;
said method further comprising the step of amplifying an optical signal output from said
optical filter and supplying an amplified optical signal to a second optical fiber for providing

normal dispersion.

32. (ORIGINAL) A device according to claim 14, wherein:

said optical waveguide structure comprises a first optical fiber for providing normal dispersion;

said device further comprising an optical amplifier for amplifying an optical signal output from said optical filter, and a second optical fiber for accepting an optical signal amplified by said optical amplifier;

said second optical fiber providing normal dispersion.
